

CLAIMS

What is claimed is:

Sub 417

1. A packaged semiconductor device, comprising:
a connection element;
at least one semiconductor die operably connected to said connection element; and
a hermetic package substantially sealing at least a portion of said at least one semiconductor die from an external environment, said hermetic package comprising a plurality of superimposed, contiguous, mutually adhered layers of a hermetic packaging material.
2. The packaged semiconductor device of claim 1, wherein said connection element comprises a carrier substrate.
3. The packaged semiconductor device of claim 2, wherein a surface of said at least one semiconductor die is disposed against said carrier substrate.
4. The packaged semiconductor device of claim 3, wherein said hermetic package covers at least another surface of said at least one semiconductor die.
5. The packaged semiconductor device of claim 1, wherein said connection element comprises a lead frame.
6. The packaged semiconductor device of claim 5, wherein said hermetic package covers at least said at least one semiconductor die.
7. The packaged semiconductor device of claim 6, wherein said hermetic package also covers a portion of said lead frame adjacent to said at least one semiconductor die.
8. The packaged semiconductor device of claim 1, wherein said hermetic packaging material comprises thermoplastic glass.

9. The packaged semiconductor device of claim 1, wherein said hermetic packaging material comprises ceramic or metal.

10. A substantially hermetically packaged semiconductor device, comprising:
a semiconductor die; and
a package surrounding at least a portion of said semiconductor die and substantially hermetically
sealing same, said package comprising a plurality of superimposed, contiguous, mutually
adhered layers, each of said layers comprising a thermoplastic glass.

11. The semiconductor device of claim 10, further comprising a carrier substrate connected to said semiconductor die.

12. The semiconductor device of claim 10, further comprising a lead frame connected to said semiconductor die and at least partially substantially hermetically sealed by said package.

13. The semiconductor device of claim 10, wherein said package further comprises at least one external circuit in communication with at least one bond pad of said semiconductor die.

14. A package for substantially hermetically packaging a semiconductor device, comprising at least one portion, said at least one portion comprising a plurality of superimposed, contiguous, mutually adhered layers of hermetic packaging material.

15. The package of claim 14, wherein said at least one portion includes a receptacle configured to receive at least a portion of the semiconductor device and to substantially seal a semiconductor die of the semiconductor device from an environment external to the package.

Sub A 17

16. The package of claim 14, wherein the package further comprises another portion configured to be assembled with said at least one portion of said hermetic package so as to substantially seal a semiconductor die of the semiconductor device from an environment external to the package.

17. The package of claim 16, wherein said another portion also comprises a plurality of superimposed, contiguous, mutually adhered layers of hermetic packaging material.

18. The package of claim 14, wherein said hermetic packaging material comprises a thermoplastic glass.

19. The package of claim 14, wherein said hermetic packaging material comprises a ceramic or a metal.

2000-03-01